

DOCUMENT RESUME

ED 380 261

RC 020 004

AUTHOR Jaramillo, James A.
TITLE The Socioeconomic, Educational, and Health Status of Chicanos in Arizona and throughout the United States.
PUB DATE 95
NOTE 24p.
PUB TYPE Information Analyses (070)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS College Attendance; *Educational Attainment; Elementary Secondary Education; Health; Higher Education; *Hispanic Americans; Mexican Americans; *Population Growth; *Professional Occupations; *Socioeconomic Status; Spanish Speaking
IDENTIFIERS *Arizona; *Chicanos; Occupational Status

ABSTRACT

In the nation and in Arizona, the Hispanic population is growing more rapidly than any other ethnic group. Similarly, the number and proportion of Hispanic children and youth are increasing, as are Hispanic students classified as limited English proficient. This paper presents an overview of information on the socioeconomic, educational, and health status of U.S. and Arizona Hispanics. Sections cover the following: (1) Spanish-speaking population, including Spanish-speaking students in schools and colleges; (2) income and occupational status, including child poverty, underrepresentation of Hispanics in professions and paraprofessions, and shortage of bilingual teachers; (3) educational attainment, dropout rates, college enrollment, and adult literacy; (4) college enrollment test scores; (5) college completion and graduate degrees; (6) crime and substance abuse; (7) health status, including prenatal care, obesity, and access to health care; and (8) recommendations for research related to health and health care. This report contains 28 references and 8 bar graphs illustrating Hispanic representation in professions and paraprofessions. (SV)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

"The Socioeconomic, Educational, and Health Status of Chicanos in Arizona and throughout the United States"

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

☒ This document has been reproduced as
received from the person or organization
originating it.

☐ Minor changes have been made to improve
reproduction quality.

• Points of view or opinions stated in this docu-
ment do not necessarily represent official
OERI position or policy.

by James A. Jaramillo (1995)
Multicultural Educator, M.A./Ph.D. Student

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

James A.
Jaramillo

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

Population Indices:

ED 380 261

In the nation and Arizona the Hispanic population is growing more rapidly than any other ethnic group. Hispanics comprise 8.2% of the United States (U.S.) population, and their numbers continue to increase at five times the rate of non-Hispanics (Balcazar & Cobas 1993). This population is estimated to become the largest ethnic minority group in the United States by the end of this decade (Balcazar et. al 1991). In 1989, Arizona's projected Hispanic population was 594,453 or 16% of the total population. The National Center for Education Statistics (1981) projected that the 2.4 million Limited English Proficient (LEP) children in 1980 ages 5 to 14 will increase to 3.4 million by the year 2000 (Valverde 1984). The proportion of Hispanic Limited English Proficient (LEP) students of this total population will similarly increase, from 1.8 million or 71% of all LEPs in 1976 to 2.6 million or 77% of all LEPs in the year 2000 (Valverde 1984). In 1984, of the 4.2 million Hispanic students, approximately two million were classified as Limited English Proficient (Valverde 1984).

The Spanish Speaking Population in AZ and the U.S.:

Re 020004

The state of Arizona is one of the top ten states with the largest language minority populations. The largest group being Spanish speaking ones (Casanova & Arias 1993:12). In 1980, Spanish language minority children constituted 9% of the nation's population which is equivalent to six million Hispanic children and youth. This population grew to constitute 13% of the nation's current population of approximately 250 million people (WAD.C. 1994). From 1980 to 1990, the number of Spanish language background school students grew by 37%

compared to the number of children and youth with other language minority backgrounds which grew by 6% [a 6 to 1 ratio] (WAD.C. 1994). In 1990, the number of students from Spanish-speaking households comprised 16% of the nation's students who were not enrolled in public schools (WAD.C. 1994). During the same year, one of every five children aged 5-17 resided in a household throughout the nation that was non-English Speaking (WAD.C. 1994). In 1990, approximately 179,000 children aged 5-17 resided in households that were Spanish speaking in Arizona (WAD.C. 1994).

In the college sector, the Hispanic proportion of high school graduates enrolled in colleges and universities did not vary during the 1972 to 1984 period (Spahn 1986). The enrollment rates continued to increase but only relative to the increase in their population numbers (Ibid). According to the 1980 census, there were 14.6 million Hispanics in the United States (Ibid). This figure indicated a 61% increase from 1970 (Ibid). In the Maricopa County Community College system, Hispanics represented 5 % of the Fall 1985 college student population which signifies underrepresentation (Spahn 1993). Hispanic underrepresentation was higher at Scottsdale Community College (SCC), where this population represented only 2.3% of the Fall 1985 college populace (Ibid). Hispanics are almost twice as likely to attend two-year colleges than four year universities (Olivas, Brown, Rosen, & Hill 1980). According to Spahn, increasing costs at four-year universities prohibit low-income minority students, [such as Hispanics] from advancing beyond the low-cost public community colleges (1986). In essence, these minorities represent a vast untapped reservoir of students"(Ibid).

Income and Occupational Status:

Hispanic children comprise 33% of Arizona's child poverty rate which is higher in raw numbers than any other non-Anglo group (AZ D.E.S. 1989:20). In South-Central Phoenix, "99% of the children who are impoverished, 92.3% are on A.F.D.C., and 96% receive free lunch (P.C.Y.F. 1992).

According to 1990 United States (U.S.) Census data, Hispanics are proportionally underrepresented in virtually every profession and para-profession throughout the nation and Arizona. They are underrepresented in the following professions: legislation, law, management and administration, public administration, medicine, health management, registered nursing, marketing and advertising, social work, accounting and auditing, social science, sociology, psychology, therapy, education teaching, postsecondary teaching, foreign language teaching, civil labor, and as judges (Figures I & II). In the para-professions of the U.S., Hispanics are underrepresented in the following professions: broadcast equipment operations, nursing aides, orderlies, and attendants, but over-represented as communication equipment operators (Figure A). Hispanic were over-represented as artists, performers, and related worker in Arizona and throughout the U.S. In the para-professions of Arizona, Hispanics are underrepresented in the profession of broadcast equipment operations; yet over-represented as nursing aides, orderlies, and attendants (Figure B).

In Arizona, Hispanics are underrepresented in the following professions: elementary school and secondary teaching, urban planning, and architecture (Figures III,IV,V,&VI). The ratio of underrepresentation of Hispanics in a given profession to this ethnic group's respective population at large in Arizona and the U.S. ranges from one-to-four to one-to-two. For instance, the number of Hispanics who work in the professions of marketing and management

when compared to Arizona's total population represent a one-to-four ratio (Figure IV). That is, there is only one Hispanic for every four who work in this profession. At the other extreme, Hispanics are virtually evenly represented in the field of social work (Figure V). For example, they constituted 16% of Arizona's population and represented 15.63% of the social work profession (Figure V). In the U.S., Hispanics comprised only 5.2% of those full time officers who were sworn into the local police departments, 4.7% of those in the Sheriff's department, and 3.8% of those in the state police department (Bur. JS 1992:41). In Arizona, the number of Hispanics employed as jail payroll and correction officers constituted only 296 of a total of 1,506, and constituted only 243 of the 1,273 correctional officer total (Bur. JS 1992:102).

Hispanics are also underrepresented in various educational professions. In 1987, Hispanics comprised 2.3% of those surveyed full-time professors in the U.S.(CED 1994). During the 1991-1992 academic year, Hispanics comprised 4.1% of those employed part or full time in colleges and universities in the U.S.(CED 1994). For instance, Hispanics are underrepresented as mathematics majors, as master and doctoral degree math graduates, and as employees in this field. (Natl. Ctr. for Ed. Stats. 1992). According to the National Science Foundation (1994:40), fewer than 20 % of Hispanic teachers are represented in the elementary and junior high school levels. Nationally, "... estimates indicate that only 46% of first-grade language minority students not fluent in English have regular classroom teachers with credentials in either bilingual education or teaching English as a second language (Devnt. Assoc. 1987). There is also a shortage of bilingual instructors to serve the growing Spanish speaking population in Arizona and in the United States. This is exemplified in California which in 1990 had approximately 655,097 Spanish-speaking K-12 students yet only had 7,602

teachers out of the 17, 435 needed to adequately teach this population (CA Dept. of Ed. 1991). This shortage of teachers constituted 9,833 people(Ibid). The state of Arizona also suffers from a shortage of bilingual instructors. Of these bilingual instructors, few of them are capable of fully communicating with and instructing in a language other than English (O'Malley, 1983).

To date, the number of clinical psychologists prepared for service and research with ethnic minorities remains dismally low. This was evident when Bernal and Castro (1994:798) compared the projected minority population in the U.S. to the representation of ethnic minorities in psychology, and concluded that "the number of minority American Psychological Association (APA) members has been no greater than 4% and shows little sign of increase. "Among psychology faculty in graduate departments across the nation, the representation has remained relatively level with 1% of Hispanics occupying faculty positions (Ibid), which shows underrepresentation when compared to this population in the nation (8%) and in Arizona (16%). Future trained minority professionals who can service their respective populations is not predicted to grow large enough to serve the needs of the minority population in the nation and in Arizona. For instance, "the number of new minority doctorates hovers around 8%, and doctoral enrollments in graduate departments have flattened out at about 10.5%" (Bernal and Castro 1994:798). Thus, the need for mental health services and research on ethnic minorities will increase at a greater rate than will the availability of qualified professionals to address these needs (Ibid).

Educational Attainment:

In contrast to their Anglo counterparts, Hispanic students attain lower school graduation rates, higher attrition rates, and score lower on mainstream English-oriented college entrance tests. In the nation, Hispanic students appear to face academic obstacles as early as grade 4 in the subjects of science, mathematics, geography, history, reading, and writing (NAEP 1990). The paucity of Hispanic students is demonstrated in grades 4, 8, and 12 where "there [were] four times as many white students in the National Assessment of Educational Progress science survey as . . . Hispanic students" (NAEP 1992:47). In Arizona, "in [the] fourth and eighth grades, Arizona's Anglo students academically outperformed their Hispanic counterparts (Schultz 1993:B4). In this state at the local level, Carter (1990:9) reveals that in a nine year period from 1977 to 1986, the percentage of students [of whom the majority were Hispanic] who were promoted from the Phoenix Union High School District after four consecutive years of high school decreased from 60% to 32%. Moreover, the reported elementary school dropout rate for Maricopa County is 10%, yet this rate was twice as high in the inner city of Phoenix [20%] which is heavily populated by Hispanics (Waits 1990). Furthermore, Hispanics represent few of the top 20% of American students who perform well in math and science from K-12 (NSF 1994:39). There are proportionally and numerically fewer Hispanic students who climb the educational ladder. That is, Hispanic student representation proportionally and numerically decreases from the high school level to the Ph.D. level and lags behind its Anglo-student counterparts at these respective levels. For example, of those Hispanics in the U.S. who were seniors in high school in 1980, 70% attained a high school diploma by 1986, 7% attained an Associate degree by 1986, and 6.8% attained a Bachelor's degree by 1986 (CED 1994). Among those Hispanics who were seniors in high school that

same year, .1% attained a professional/graduate degree by 1986 (CED 1994). In a similar national study, Mercer (1991:4) reports that of those 1980 high school graduates who enrolled full time in two-year colleges, Hispanics attained higher attrition rates than their Asian minority counterparts and the student population as a whole. Moreover, "the [national] percentage of . . . Hispanic high school graduates enrolled in college declined dramatically between 1976 and 1988" (D. Carter 1990:1), yet this population grows at a rate that exceeds the dominant Anglo population's. Furthermore, of those Hispanics aged 25 and older, 30% had completed eighth grade or less of education by 1990, 19.5% had completed some high school, but had not graduated by 1990, and 21.6 % had completed a high school diploma by 1990 (CED 1994). In the survey, "Adult literacy in America, the National Center for Education Statistics (1993) reported that the average literacy levels for Hispanics ranged from 80 to 90 percent less than that of whites for the prose, document, and quantitative components of the survey (In NSF: 1994:5).

College Enrollment Test Scores:

In 1990, Mexican-American high school students earned an average of 18.4 on the American College Test (ACT) on a scale from 1 to 36 which was less than their Anglo counterparts who scored 21.4 (CED 1994). During this same year, Mexican-American high school students earned an average score of 372 on the verbal section and a score of 427 on the mathematical section of the Scholastic Assessment Test, which was less than their Anglo counterparts who respectively scored 443 and 495 (CED 1994). At the graduate school level, Hispanics similarly scored low on national standardized tests, such as the Graduate Record Examination (GRE). For instance, Hispanics on the average scored in the 200s, which is low (equivalent to so called chance scores)[Sullivan and Keller 1993]. Nevertheless, Puerto Rican

students on the average scored in the top 10% or 89th percentile on the Prueba Admision para Estudios Graduados (PAEG) test, which is administered in Puerto Rico (Ibid). Also, unlike the GRE test, this PAEG test is an accurate predictor of success in graduate school for test takers whose dominant language is Spanish (ibid). For instance, when each students' PAEG scores were compared with their GRE scores, both the PAEG-English section scores and the PAEG-Quantitative scores correlated higher with first year graduate GPA than the corresponding GRE scores (Ibid). Moreover, the PAEG scores also correlated higher with faculty ratings of the students' actual graduate work than the corresponding GRE scores (Ibid). In summary, the PAEG appears to be a predictor of academic success among Puerto Ricans, and may therefore be more conducive to Hispanic student comprehension than the Euro-American oriented GRE. The implications of these findings indicate that Hispanic students perform better on tests that are designed by Hispanics who use Spanish and their cultural content to devise examinations. In other words, Hispanics probably score higher on the PAEG because the exam is constructed in a cultural-linguistic context that is compatible with Hispanics. Furthermore, many universities such as Harvard University and Ohio State University do not require GRE scores as part of a student's application process into graduate college. Assuredly, they realize that the GRE is flawed due to its failure to account for the many cultural and linguistic factors attributed to non-English speaking graduate student applicants. Lastly, most cultural anthropologists deem mainstream standardized tests as Euro-centric and therefore inappropriate at measuring or assessing minority student intelligence.

College Enrollment and Attainment by Hispanic Ethnicity:

Of those Hispanics in the U.S. aged 25 and older, 14.3% had completed some college, but had not attained a degree by 1990, 4.8% had completed an Associate's degree by 1990, 5.9% had completed a Bachelor's degree by 1990, and 3.3% had completed a graduate or professional degree by 1990 (CED 1994). A National Science Foundation (NSF) survey of the top 20 universities showed that only 104 Mexican Americans earned baccalaureate degrees in physical science ((NSF 1994:39). Moreover, the number of minorities at the doctoral level in the physical sciences has declined (NDF 1994:39). Among those students throughout the nation who received a doctorate in 1992, Hispanics received 3.8% of those given in all field, 3.2% of those given in the subject of Arts and Humanities, and 3.7% of those given in the subject of the Social Sciences (CED 1994). Hispanics tend to occupy the middle (approximately 35%), and the bottom portions (approximately 45%) of those who do not perform as well (NSF 1994:39). Hispanic underrepresentation is further exacerbated by the fact that educators tend to perceive community colleges as feeders for four year institutions, yet they are not located in Hispanic neighborhoods (NSF 1994:54). In retrospect, a myriad of data were presented to present the context of need. This need is corroborated by the NSF which asserts that "the data provide compelling evidence of the Nation's need to commit to proactively altering current circumstances (NSF 1994:61). The data demonstrate a highly restricted college pipeline across all subjects for Hispanic students.

Crime and Substance Abuse:

In South Central Phoenix, which is mostly inhabited by Hispanics, juvenile crime is often violent, substance abuse is prevalent, and teenage parenting is an accepted way of life among youth (Waits 1990:40. Because Hispanic teenagers tend to experience two or more of

the aforementioned risk factors, they are classified as at-risk (Ibid). "In sum, risk factors and declining educational trends continue despite the fact that a variety of social service program and activities are available to these inner-city youth" (Jaramillo 1993:17).

Health Status:

The lack of insurance, transportation, language difficulties and fears of deportation discourages impoverished Hispanic women from receiving proper health care. Many of these women are relatives of migrant farm workers and have no access to regular health care or preventive care (McGeorge 1993). Migrants also experience increasing cases of HIV and tuberculosis, nutritional problems, and infectious diseases (Ibid). About 25% of Hispanics nationally and in the State of Arizona do not have health insurance (Flinn Fdn. 1989). The increasing trend towards excluding prenatal care as part of a general insurance policy tends to further increase the number of Hispanics without this coverage (Balcazar 1991:424). Mexican-American mothers terminated pregnancies more than twice as often as white mothers (Balcazar 1992). Some studies have shown that Hispanic women are as much as three times more likely to develop breast cancer or cervical cancer (Coe 1994). Mexican Americans experience higher incidents of obesity than their Anglo counterparts (Balcazar & Cobas 1993). For instance, in Balcazar's study, he reported that Mexican-Americans had a greater percentage of cases in the overweight group (36.1%) in comparison to whites (21.4%). This study indicates that overweight Mexican-Americans are less likely to have reported high blood pressure, being overweight, cigarette addiction, and to report a high cholesterol level than overweight whites (Balcazar & Cobas 1993). This study concluded that "overweight Mexican Americans are more likely to not have been advised to reduce weight and not to have had their cholesterol measured (Ibid). Those Mexican-Americans classified in the overweight

group had also a younger mean age in comparison to the mean age for the white sample (41.5 vs. 48.9 for Mexican-Americans and Whites respectively) (Ibid).

They also believe that Mexican-Americans experience a longer duration of overweightness than their non-Hispanic white counterparts (Ibid). Epidemiological studies have reported that Mexican Americans are less concerned with obesity and with losing weight than Anglos (Balcazar & Cobas 1993). Furthermore, Mexican-American women born in Mexico underuse available health facilities and are at a greater risk of not receiving prenatal care (Balcazar 1991). This low use of prenatal care among Hispanics poses a risk to maternal and infant health care. This is particularly apparent among teenage Mexican Americans who have the greatest rate of low birthweight among this population (Balcazar 1992). There is a higher prevalence of preterm delivery and macrosomia among Mexican-Americans when compared to the Anglo population (Balcazar 1992). In contrast to their Anglo female counterparts, Mexican-American mothers tend to fall into the inadequate and no-care groups (Balcazar 1992). In this study, low birthweight to the total birthweight in the adequate/no prenatal care group was greater among Mexican-Americans than Whites (26.6% versus 14.3%) (Balcazar 1992).

Healthcare Recommendations:

In lieu of these health care risks, Balcazar (1992) states that research is needed to determine the relative contribution of socioeconomic factors and factors associated with family values, traditions, and beliefs, which are distinctly different between ethnic groups. He also stresses further investigation of macrosomia in Mexican-Americans. Furthermore, "research should establish the extent to which macrosomia is related to gestational diabetes or maternal obesity in Mexican-Americans . . ." (Balcazar 1992:6). Balcazar et al. (1991) also suggest

that researchers should study how maternal attitudes, values, and beliefs influence health care among Hispanic women. "Finally, detailed studies addressing the quality, content, and efficacy of care will help clinicians better understand the impact of prenatal care as an effective health care intervention in Mexican-American women"(Ibid).

References Cited

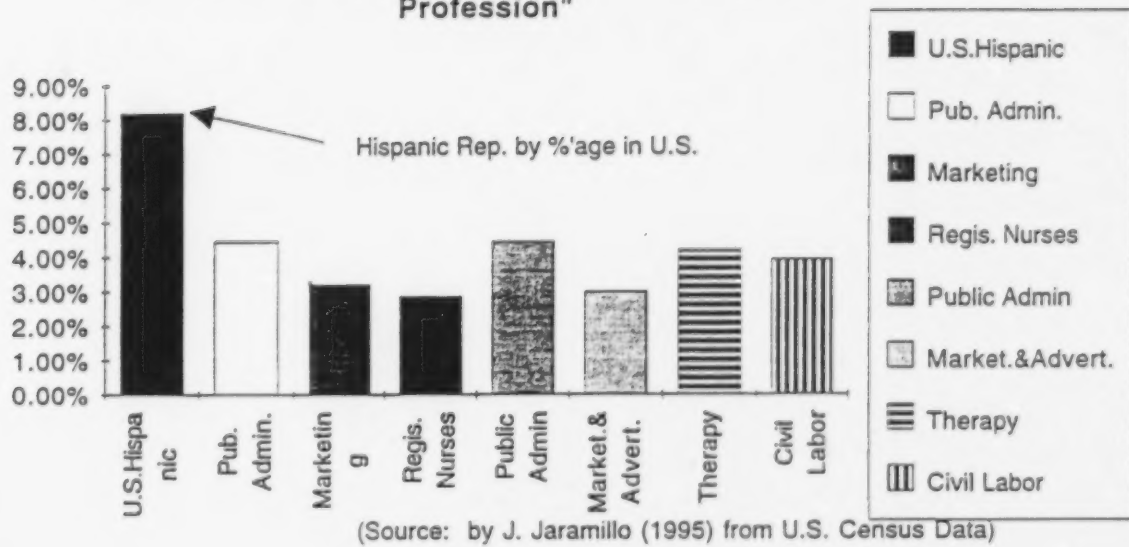
- Arizona Department of Economic Security (AZ D.E.S.)
1989 Governor's Office for Children State of the Child Phoenix, Arizona: Governor's Office for Children.
- Balcazar H., Aoyama C., Cai X.
1991 Interpretive Views on Hispanics' perinatal problems of low birthweight and prenatal care. Public Health Report 1991;106:420-6.
- Balcazar H., and J.A. Cobas
1993 "Overweight Among Mexican Americans and its Relationship to Life Style Behavioral RiskFactors." Journal of Community Health 18 (February, 1993): 55-67.
- Balcazar H., Cole G., J. Hartner
1992 Mexican-Americans' Use of Prenatal Care and Its Relationship to Maternal Risk Factors and Pregnancy Outcome. American Journal of Preventive Medicine 1992; 3(1).
- Bernal, M., Felipe Castro
1994 Are Clinical Psychologists Prepared for Service and Research with Ethnic Minorities? American Psychologist. September 1994. American Psychological Association (APA). Vol. 49. No. 9. pp.797- 805.
- Bureau of Justice Studies (Bur. JS)
1992 Bureau of Justice Statistics: Sourcebook of criminal justice statistics-1991. University of Albany, Criminal Justice Research Center: Albany, New York.
- California Dept. of Education
1991 Remedying the Shortage of Teachers for Limited-English Proficient Students. Sacramento, California: California Department of Education.
- Carter, Craig Alan
1990 The Demise of the 1982 Murphy Elementary District Promotion Class: Reflections of Organizational Instability. Ph.D. Dissertation, Arizona State University: Tempe.
- Carter, Deborah J.
1990 Racial and Ethnic Trends in College Participation: 1976 to 1988. Research Briefs. 1(3):1-6.
- Casanova Ursula, and M. Beatriz Arias
1993 Bilingual Education: Politics, Practice, and Research. University of Chicago Press: Chicago.
- Chronicle of Higher Education (CED)
1994 The Chronicle of Higher Education. Washington D.C.
- Coe, Kathryn
1993 "ASU programs bring free health care to Hispanic women" In State Press. By David Proffitt, September 30, 1993.

- Development Associates
 1987 National Longitudinal Evaluation of the Effectiveness of Services for Language Minority LEP Students Study. Arlington, Virginia.
- James A. Jaramillo's
 1993 The Impact of Family Math/Family Science Upon the Attitudes and Behaviors of Participants in the Valley of Phoenix from Fall of 1991 to Spring of 1993. Education Resources Center/Valle del Sol, Inc.: Phoenix.
- McGeorge, Patsy
 1993 "ASU programs bring free health care to Hispanic women" In State Press. By David Proffitt, September 30, 1993.
- Mercer, Joyce
 1991 "Marginal Improvement in Black, Hispanic College Enrollment in Late 1980s: Ace Study Concludes." Black Issues in Higher Education? 7(24):3-4.
- National Assessment of Educational Progress (NAEP)
 1992 in National Science Foundation's (NSF) 2nd National Conference on Diversity in the Scientific and Technological WorkForce: Conference Proceedings. Arlington: Virginia.
- National Center for Educational Statistics
 1992 Dropout Rates in the United States: 1991 U.S. Department of Education, Office of Educational Research and Improvement (NCES pp.92-129).
- National Science Foundation (NSF)
 1994 2nd National Conference on Diversity in the Scientific and Technological WorkForce: Conference Proceedings. Arlington: Virginia.
- Olivas, Brown, Rosen, & Hill⁴
 1980 in Karen K. Spahn's (1986) "Motivational Determinants of First-Time Non-Traditional Students' Selection of Educational Institution." MA Thesis, Arizona State University (ASU): Tempe.
- O'Malley, M.J.
 1983 The Need for Teachers in Bilingual Programs: Finding from the 1980-81 teachers' Language Skills Survey. Rosslyn, VA: National Clearinghouse for Bilingual Education.
- Phoenix Coalition for Youth and Families (PCYF)
 1992 PCYF Departmental Literature. University of Arizona: Phoenix. In James A. Jaramillo's The Impact of Family Math/Family Science Upon the Attitudes and Behaviors of Participants in the Valley of Phoenix from Fall of 1991 to Spring of 1993. (1993) Education Resources Center/Valle del Sol, Inc.: Phoenix.
- Schultz, Ray
 1993 Few Arizona Pupils Proficient in Math Skills, Report shows. Arizona Republic/Phoenix Gazette: Phoenix. April 9, 1993. In James A. Jaramillo's The Impact of Family Math/Family Science Upon the Attitudes and Behaviors of Participants in the Valley of Phoenix from Fall of 1991 to Spring of 1993. (1993) Education Resources Center/Valle del Sol, Inc.: Phoenix.

- Spain, Karen K.
 (1986) "Motivational Determinants of First-Time Non-Traditional Students' Selection of Educational Institution." MA Thesis, Arizona State University (ASU): Tempe.
- Sullivan, Michael J. Gary D. Keller
 1993 Student Information Booklet: Project 1000. Arizona State University, Project 1000: Tempe.
- Valverde, L.A.
 1984 "Underachievement and underrepresentation of Hispanics in mathematics and mathematics related careers." Journal for Research in Mathematics Education, Vol. (15): pp. 123-133.
- Waits, Juanita O'Campo
 1990 Phoenix Coalition for Youth and Families (P.C.Y.F.). Grant Proposal.
 University of Arizona: Phoenix. In James A. Jaramillo's The Impact of Family Math/Family Science Upon the Attitudes and Behaviors of Participants in the Valley of Phoenix from Fall of 1991 to Spring of 1993. (1993) Education Resources Center/Valle del Sol, Inc.: Phoenix.
- Washington, D.C.
 1994 "Numbers and Needs: Ethnic and Linguistic Minorities in the United States." Vol. 4, no.4; July 1994.

FIGURE I

"1990 U.S. Hispanic Representation in the U.S. and Profession"



Note: Marketing and Advertising includes the profession of Public Relations.

FIGURE II
Hisp.Rep.in U.S.&by Profes.

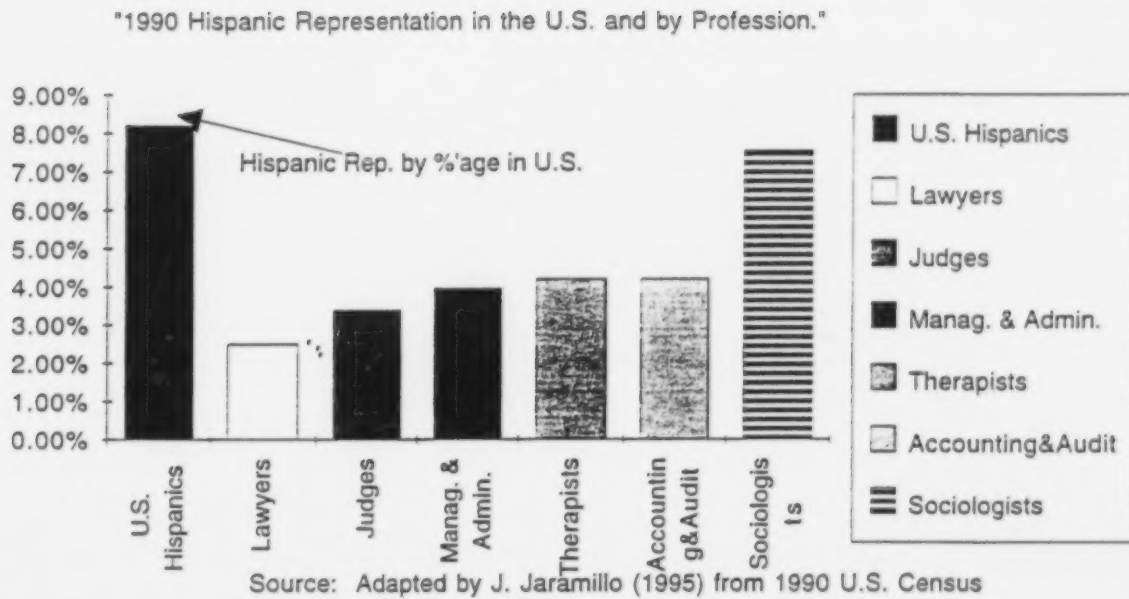


FIGURE III

"1990 Hispanic Representation in Arizona and by Profession"

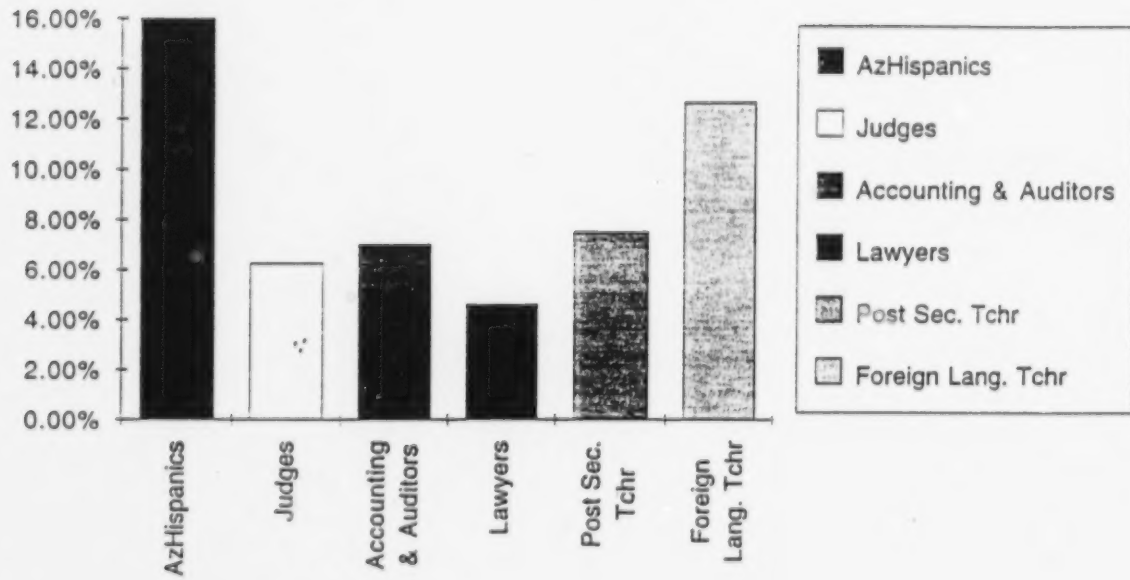
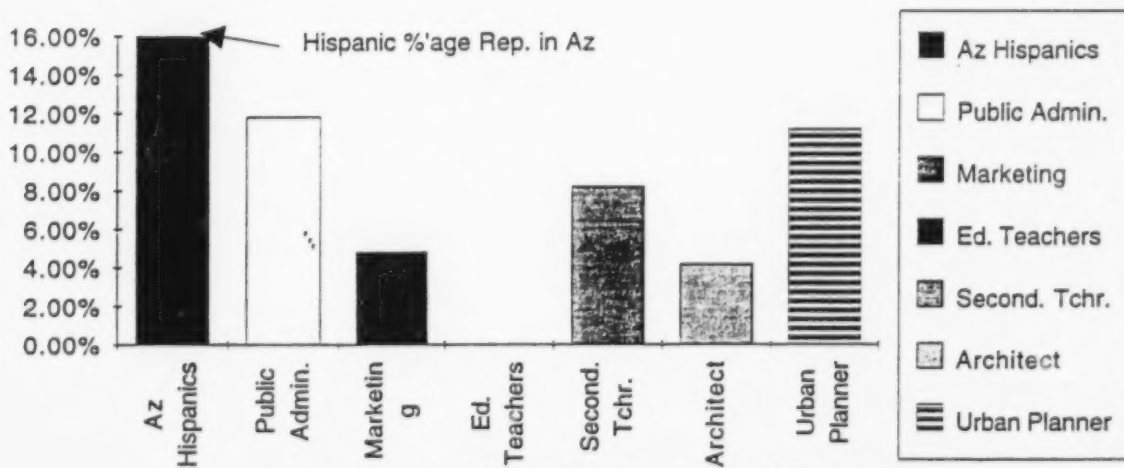


FIGURE IV

**"According to 1990 U.S. Census, Hispanic Representation
Arizona Versus Ethnicity by Profession"**

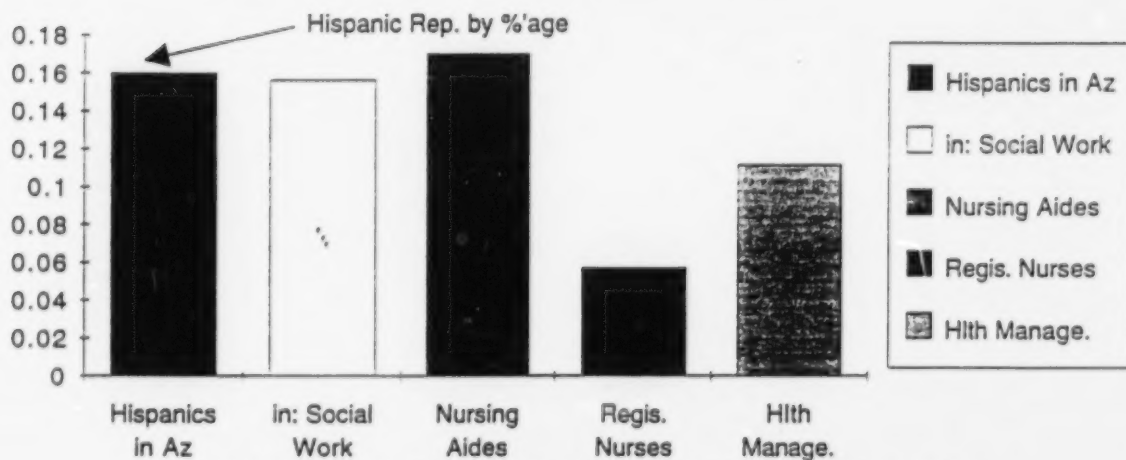


Source: J. Jaramillo (1995) adapted via 1990 U.S. Census

Note: The profession of Marketing includes public relations and Advertising.

FIGURE V

**"According to 1990 U.S. Census Hispanic Representation
Arizona Versus Ethnicity by Profession"**



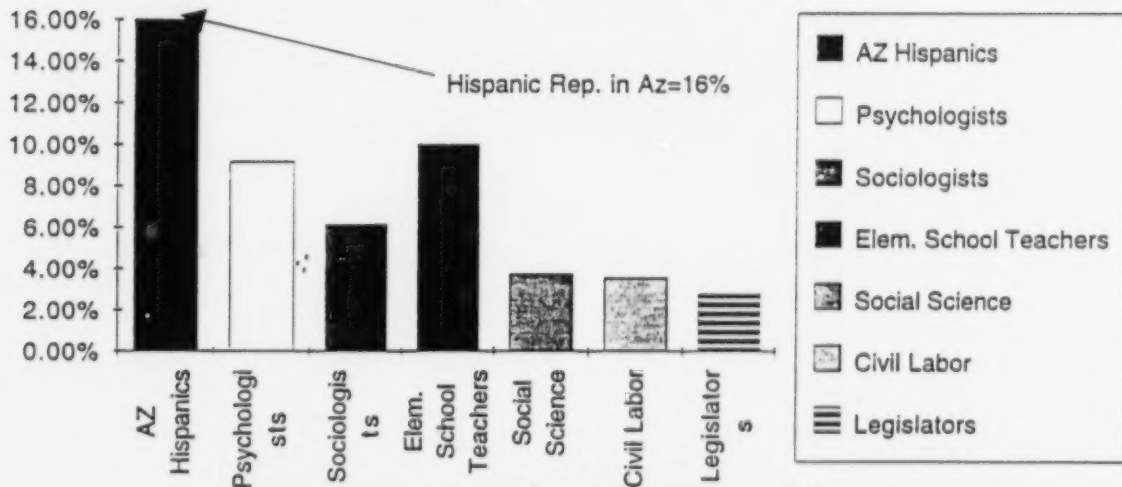
Source: by J. Jaramillo (1995) Adapted via 1990 U.S. Census Data

Note: Health Management includes the profession of Medicine.

FIGURE VI

"1990 Hispanic Representation in Arizona and by Profession"

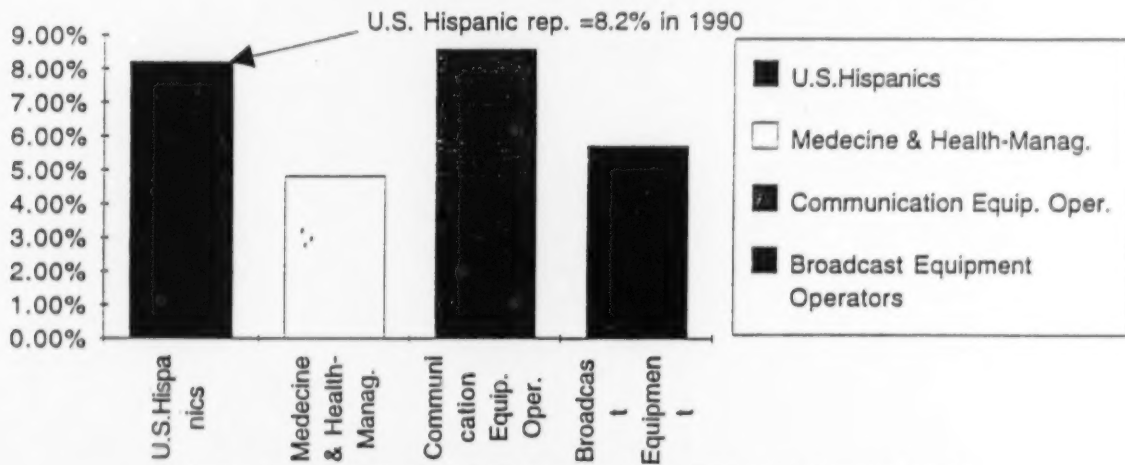
by James A. Jaramillo (1995)



(Source: Adapted from 1990 U.S. Census Data of Pop. & Housing).

FIGURE A

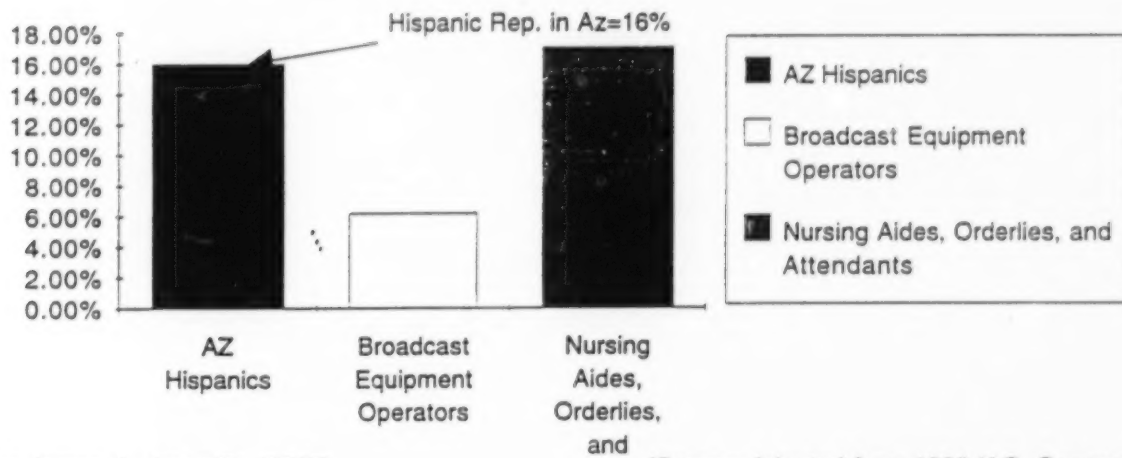
"1990 Hispanic Representation in U.S., and by Para-Profession and Profession"



(Source: by J. Jaramillo (1995) adapted from 1990 U.S. Census Data.)

FIGURE B

**"1990 Hispanic Representation in Arizona and by Para-
profession"**



by James A. Jaramillo (1995)

(Source: Adapted from 1990 U.S. Census Data).